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HAMILTON ENVIRONMENT '80

ABSTRACTS AND BIO-SKETCHES



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DIVIDE AND DEFEAT - THE POWER TO CONTROL THE ENVIRONMENT

Herman Turkstra, Barrister and Solicitor

The power to control pollution was traditionally split between the Federal, Provincial and Municipal governments. In recent years new mini governments such as Conservation Authorities, Harbour Boards, and the Niagara Escarpment Commission have added to the confusion. Some power to protect the environment has been retained in the common law and enforced by the civil courts.

Developers and Industrial managers have been faced with a network of controls that often appear confusing. For some small businesses the problems have been difficult or impossible to deal with. But for individual citizens concerned about their environment and wanting to do something constructive, the morass of competing jurisdiction and bureaucratic confusion has been frustrating, defeating and in the final analysis, mostly overwhelming. Reasonable citizens, legitimately concerned about the quality of life, but not knowing who's really responsible, have often given up. The field has been left to the determined industrialist and the single-issue fanatic. The media have not played any serious role to date, content to report the occasional confrontation.

This article will attempt to outline the legal responsibility of the different divisions of government and the legal and political avenues open to ordinary, sensible, concerned citizens, for direct influence on the quality of their environment. The role of Freedom of Information legislation in citizen involvement in this area is also examined.

HERMAN TURKSTRA

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BIO-SKETCH

Herman Turkstra is a Hamilton lawyer. A graduate of McMaster University and Osgoode Hall Law School, he is a member of the Advocates Society of Ontario and The International Society of Barristers. He served on Hamilton's Board of Control in 1971 and 1972, was the founding President of the Hamilton Medical Legal Society and for several years served as The Chairman of the Ontario Council for Legal Education. He has served as director and member of the Executive of the Hamilton Philharmonic Orchestra, The Canadian Club and The Hamilton Law Association.

A UNIFIED APPROACH TO ENVIRONMENTAL PROTECTION AND OTHER COMMUNITY GOALS.

Vladimir Matus - Hamilton-Wentworth Region Planning and
Development Department.

Apparent Conflicts and Misunderstandings

Economic growth and development, urban and regional planning, environmental protection and energy conservation and management are four major areas which are considered as separate entities and are managed by independent regulatory agencies.

It is commonly believed that their respective goals are mutually exclusive:

- the believers in unlimited growth and economic development insist that growth must be pursued at all costs;
- urban and regional planners are refusing to simplify their labyrinth of policies, by-laws and regulations, many of which are based on nineteenth century realities;
- the environmentalists appear to put the welfare of groundhogs, crickets and butterflies above the welfare of people, and
- the energy conservation worshippers would like us to live in arctic sleeping bags and bicycle all year round.

The general public is caught in a war between four empires.

However, is it possible that these seemingly irreconcilable adversaries are in fact different manifestations of the same single larger problem?

Economic Growth and Development versus Planning

The accelerated speed of technological development has introduced enormous complexities into our lives. Whatever we do, every action has a large, sometimes unforeseen, impact. To avoid unpleasant surprises, it is in the interest of society to bring order and sense of predictability into the present chaotic situation. Uncontrolled growth and development is a wonderful dream belonging to a small society living on a big land of seemingly inexhaustible resources.

Energy Consumption and Environmental Overload

The simplest description of what we call the ecological balance in nature would be the following:

All living systems are interdependent. The refuse of one system is fuel for another. The closed loop is propelled by the sun.

Occasionally, one of the natural systems starts to run loose. It requires more food than available and produces more refuse than can be handled by others. It is well documented that this behaviour is a ticket to catastrophe.

At the moment we (humans) appear to be on this unfortunate track.

The need for a Unified Approach

Misunderstanding and a lack of proper perspective weakens our efforts. The development of a new wholistic approach is mandatory and is the greatest challenge of our time. "Small" is beautiful but "big" is exciting. So, if we should choose to think "big", we have to use a very sophisticated approach to implement that goal.

The quest for true prosperity and economic wealth must be pursued without undermining our natural life support base. What we take from the natural environment (energy, resources) has to be carefully balanced with what we return. Our continuously increasing knowledge about the natural environment holds a great promise for the future.

But the development of a paradise in our delicate natural equilibrium cannot be achieved without a great deal of sophistication, environmental responsibility and systematic planning.

VLADIMIR MATUS

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BIO-SKETCH

Born on September 19, 1935 in Uzhorod, Czechoslovakia

Married with no children

Education:

Dipl. Eng. Arch. (Prague, 1961)

B. Psych. (Prague, 1964)

M. Arch. (Toronto, 1969)

Professional experience:

1963-1966	Researcher, Czechoslovak Academy of Sciences, Department of Theory of Architecture and Human Environment
1966	Arrived in Canada
1969-1970	Research Fellow, Environmental Research Group, University of Toronto - Design and Planning of Northern Communities, Design of Experimental Arctic Housing.
1970-1975	Joined several private architectural firms as a team architect, (Webb, Zerafa, Menkes; Herbert Agnew, Associates, etc.) Later, worked as senior architect in charge of design with Leslie Rebanks, Architect.
1975-present	Head of the Urban Design Section of the Planning and Development Department, Hamilton-Wentworth Region.

Mr. Matus has a wide spectrum of architectural design experiences ranging from single family houses to large multimillion dollar complexes.

He is the recipient of several Architectural competition Awards. In addition, he is a member of the Royal Architectural Institute of Canada, The Ontario Association of Architects and The Canadian Institute of Planners.

He is the author of numerous articles in both European and Canadian professional magazines.

HAMILTON AIR QUALITY.

K. E. Trent, P.Eng. - Chief, Air Quality Assessment
Ministry of the Environment, West Central Region

An overall description of the Hamilton emission source inventory will be presented together with resulting statistical data identifying the major contributing categories of inventoried sources.

Observed air quality in Hamilton for 1979 will be discussed in conjunction with trends observed for the various pollutants during the last decade. The local topography and meteorological conditions, leading to increased pollution levels, will be described.

Particulate matter identified as the major problem pollutant in Hamilton, will be reviewed, collection methods identified, and the implications of the various size ranges considered. Reference will also be made to fugitive, non-inventoried sources.

Finally, the major remaining Hamilton industrial problem sources will be reviewed and the listing of proposed control programs will be presented together with target dates for completion.

K. E. TRENT

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BIO-SKETCH

Ken Trent is the Chief of Air Quality Assessment for the Ontario Ministry of the Environment's West Central Region.

He is an Associate of the Manchester (England) College of Technology in Mechanical Engineering, graduating with distinction in 1951. He came to Canada in 1952 and has been a member of the Association of Professional Engineers of Ontario since 1953. After years of experience in the Aeronautical and Consumer Goods industries, he became interested during the 1960's in environmental problems and joined the Ministry at the beginning of 1969. His work was initially as an Abatement Engineer and later in the development and validation of the Ontario Mathematical Air Quality Model. Mr. Trent has been at his present position in Stoney Creek since 1975. He's the author and co-author of a number of technical papers and has been an active member of both the international and local chapters of the Air Pollution Control Association.

PARTICULATE EMISSION CONTROLS BY STELCO

Roy Littlewood - Senior Technical Advisor,
Research and Development Department, Stelco

Hamilton has an unusual geographic setting, in which the 100-metre-high Niagara Escarpment forms a bowl shape, open to Lake Ontario to the east. As a result, the city is subject to air quality problems when lake-based meteorological inversions form a "lid" over the city.

Particulates have been the main problem and have exceeded the Ontario Ministry of Environment (MOE) objectives since these were established in 1970. In the late 60's and early 70's, Hamilton's industries worked out with the MOE a drastic program for abatement of particulate emissions from process sources.

Stelco's particulate emissions have been reduced substantially and emissions now are less than one-third what they were in 1970, in spite of increased steel production.

The steps contributing to this remarkable achievement are described.

A few remaining problem areas are discussed.

ROY LITTLEWOOD

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BIO-SKETCH

Roy Littlewood is Senior Technical Advisor at the Stelco Research Centre in Burlington. Born and educated in England, he worked in several academic and industrial research institutions there, before joining Stelco Research in 1964. He has lectured at McMaster University, as part-time professor, at University of Waterloo and at Mohawk College. He has been concerned with environmental studies for the last three years.

REDUCTION OF AIR POLLUTION EMISSIONS FROM DOFASCO

M. S. Greenfield - Dofasco

Dofasco, as Canada's Second Largest Steel Producer, has a potential for producing large quantities of air pollutants, including in particular, SO₂, NO_x, and CO.

2 X

The paper will describe Dofasco's program which is designed to reduce emissions to government standards. In order to reduce these emissions, novel techniques have been developed.

Progress or emission reductions achieved to date will be reported. Further reductions to be attained in the future will also be outlined. Also, the reductions which can be achieved by incorporating pollution control into the initial design of operating equipment will be described.

M. S. GREENFIELD

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BIO-SKETCH

Mr. Greenfield resides in Dundas, Ontario and is married with one daughter.

He graduated from McMaster University in 1965 as a metallurgical engineer and joined Dofasco in May, 1965.

In 1966, he started in the Metallurgical Department, and in November 1969, was appointed to the position of Air and Water Quality Engineer.

He is a Director of the Pollution Control Association of Ontario and is a member of several other environment-related organizations.

URBAN ROAD DUST AS A SOURCE OF SUSPENDED PARTICULATES
IN HAMILTON

S. C. Barton, Ontario Research Foundation

D. Kane, United Technology & Science, Inc.

J. Hunt, Concord Scientific Corporation

Traditional industrial sources of particulate matter have been subjected to increasingly stringent regulations during recent years and significant reductions in total suspended particulate matter (TSP) concentrations have been achieved in Hamilton and other cities with heavy industry. However, there appears to be a limit to the improvements in air quality which can be achieved through control of these traditional sources. Hence there is a need to assess other sources, such as dust caused by wind and traffic, which might be responsible for elevated TSP loadings in urban areas. A comprehensive study designed to characterize atmospheric particulates, define the importance of various source types, and evaluate street-cleaning methods was initiated in 1979, using Hamilton as a case study. Detailed studies of particulate loadings at several sites in Hamilton were conducted over a 3-month period using several monitoring methods. The monitoring results, in conjunction with a detailed inventory of all sources in the study area, suggest that re-entrained dust from local roads can contribute up to 40% of TSP loadings in downtown Hamilton. Variations in observed loadings between sites also appears to be largely a consequence of contributions from local roads. The collected samples are being analyzed for a broad range of chemical constituents and these results will be used to assess in detail the relative contribution of various source types to TSP loadings in the Hamilton area. The study will result in a better understanding of the potential contribution of non-traditional sources to urban TSP loadings, thus enabling more relevant and cost-effective abatement strategies to be developed.

Dr. S. C. BARTON

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BIO-SKETCH

Principal Scientist, Department of Environmental Chemistry.

Education: B.Sc Honours, Chemistry, 1961
 Queens University, Kingston, Ontario

 M.Sc - Physical Chemistry, 1962
 Queens University, Kingston, Ontario

 Ph.D - Gas Phase Reaction Kinetics, 1966
 University of Toronto, Ontario

Areas of Expertise:

Air Quality Monitoring and Survey Design
Atmospheric Chemistry
Development of Air Pollution Monitors
Preparation of Environmental Impact Statements
Long-range Transport and Deposition Studies
Supplemental Control System Design
Computer application in Air Quality Studies
Project Management

Experience:

Design and conduct of Comprehensive Ambient Air Quality Studies for Government and Industry.

Development of prototype instruments, including reactive hydro-carbon monitor.

Long-range Transport and Deposition Studies, including a comprehensive assessment of mercury transport and deposition in Ontario.

Measurement of background hydro-carbon levels in the vicinity of a large industrial development.

Preparation of emission inventories for urban areas.

Design and procurement of data acquisition system for use in a comprehensive ambient air quality survey.

Comprehensive review of long-term air quality data from the vicinity of a large smelter.

JAMES E. HUNT

-

BIO-SKETCH

Currently President of Concord Scientific Corporation and Environmental Consultant for seven years.

Education: Ph.D Physical Chemistry from University of British Columbia.

Employment: Ontario Ministry of Environment as Research Officer

York University as Research Assistant

Researcher at Centre for Research for Experimental Space Science

Fields worked in:

Atmospheric chemistry

Physics

Meteorology, instrumentation and analytical developments and hazardous materials in the environment.

DAVID M. KANE

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BIO-SKETCH

Education:

University of Waterloo - Dr. of Philosophic Chemistry 1975
Master of Science and Chemistry 1971

Professional Memberships:

Air Pollution Control Association
American Chemical Society
Chemical Institute of Canada

Professional Experience:

Dr. Kane has a broad range of experience in air quality management and emission control technology including management of studies of the effects of particulate levels, assessment of precipitation events, monitoring of sulphur emissions, and analytical chemistry applied to environmental monitoring.

LONG-RANGE TRANSPORT OF AIR POLLUTANTS AND EFFECTS
ON THE GREAT LAKES BASIN

Floyd C. Elder, National Water Research
Institute - Canada Centre for Inland Waters

The increased emissions of gaseous pollutants and the more efficient removal of particulate materials from air pollutants dispersed from increasingly high stacks over the industrial areas of North America have lessened the local "air pollution" concerns but have given rise to a worsening of the problems now termed "long-range transport of air pollutants". The gases and very small particulate materials are transported with the ambient air masses and are scavenged by precipitation thus giving rise to contamination of rain and snow.

Contamination of precipitation over the Great Lakes Basin has been monitored at a network of sample stations for several years. These records now provide ample evidents of the degree of contamination which include the abnormal acidification often termed "acid rain". The acidic levels of prevailing precipitation seriously affect the fish habitat of the soft water lakes prevalent in much of the Great Lakes Basin. Trace elements and biological nutrients add significantly to the budgets of the Great Lakes.

The influence of this atmospheric transport of pollutants to the Great Lakes Basin will be presented and the implications to the control of pollution from the Hamilton industrial area will be discussed.

FLOYD C. ELDER

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BIO-SKETCH

Mr. Elder is presently Chief of the Aquatic Physics and Systems Division of the National Water Research Institute, Canada Centre for Inland Waters. He is the co-ordinator of the federal Department of Environment program on aquatic effects of Long-range Transport of Air Pollutants and directs the NWRI portion of that program. He serves as a Department representative on various international committees dealing with the long-range transport of air pollutants concerns and has provided several contributions to the International Joint Commission assessing the importance of this issue to the Great Lakes Water Quality.

Mr. Elder has received Bachelor and Master of Science degrees from the Pennsylvania State University. He has conducted research related to the Great Lakes at the University of Michigan and at the Canada Centre for Inland Waters.

THE RELATION BETWEEN AIR POLLUTION AND LUNG CANCER:
ASSOCIATION OR CAUSATION?

D. L. Sackett, H. S. Shannon, S. Desai, et al.

It has been suggested that air pollution levels are closely correlated with the risk of lung cancer. However, in deciding whether this statistical association represents causation, two key steps must be carried out. First, the strength of the association must be verified by the best available data on air pollution and on lung cancer occurrence. Second, the specificity of the association must be verified by taking into account other known causes of lung cancer whose distribution in a community may parallel that of air pollution.

We are currently carrying out both of these steps here in Hamilton. First, using vital statistics data we are determining whether Hamilton does, in fact, have higher lung cancer mortality than other Canadian cities. Second, we are completing a survey of random samples of residents in several Hamilton neighbourhoods to determine rates of cigarette use, of occupational exposures and of residential mobility.

Our presentation will summarize this approach and present the preliminary results of our research.

DR. D. L. SACKETT

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BIO-SKETCH

Dr. Sackett is an Internist, Clinical Epidemiologist and an internationally known Bokononist. He is currently a professor of clinical epidemiology and bio-statistics and of medicine at the McMaster University Medical Centre.

Dr. Sackett's interests include the design, execution and interpretation of randomized clinical trials, the assessment of the diagnostic process and the study of the clinical course and prognosis of human disease.

DR. S. D. DESAI

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BIO-SKETCH

Qualifications: M.B., ch.B., M.B., F.R.C.P.(C), F.A.C.P.

Assistant Professor Medicine McMaster University, and Director of Respiratory Services at Henderson General Hospital.

Current areas of interest and research include epidemiology and diagnosis of lung cancer as well as diagnosis and treatment of pleural disease especially malignant pleural disease.

DR. HARRY S. SHANNON

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BIO-SKETCH

- 1970 BA Second Class Honours - Mathematics from
Oxford University
- 1971 MSc - Mathematical Statistics, Birmingham University
- 1978 PhD - Applied Statistics from London University

Short courses taken in:

- 1975 Workshop and training course on cancer registries
and occupational cancer IARC, Leon, France
- 1976 International advanced course in Epidemiology
methods. Institute of Occupational Health -
Helsinki, Finland

Employment:

- 1972-1977 Statistician T.U.C. Centenary Institute of
Occupational Health - London School of Hygiene
and Tropical Medicine, England.
- 1977 Assistant Professor, Dept. Clinical Epidemiology
Bio-Statistics. (assist in Occupational Health
Program) McMaster University.

A Grant was awarded in 1975 from the British Medical Research
Council to assist "An In-Depth Study of 25,000 Consecutive
Accidents at an Automobile Factory".

PAST, PRESENT AND FUTURE ENVIRONMENTAL PROBLEMS WHICH
CAN OCCUR IN CONSERVATION AREAS DUE TO ENVIRONMENTAL
DEGRADATION BOTH WITHIN AND OUTSIDE THOSE AREAS

J. J. Coates, Assistant General Manager
Hamilton Regional Conservation Authority

The paper deals with those objects identified for a conservation authority under Section 19 of the Conservation Authorities Act furthering the conservation, restoration, development and management of natural resources within conservation areas. The paper identifies environmental problems encountered by the Authority in various phases of its projects and steps which have been taken to overcome these environmental problems.

Historical information relating to the Authority's watercourse sampling program outlines where data was collected and analysed and sums up the improvements and general problems to date.

The paper then outlines a series of environmental problems encountered during development of the Valens and Christie Conservation Areas from both external and internal sources and specific steps that have been taken in these areas to eliminate or control these environmental problems.

Present and future problems are documented based on water course quality data for that area of the Lake Ontario waterfront within the Authority's jurisdiction. The Authority is becoming more and more active in this area with the Beach Strip acquisition project, the Stoney Creek waterfront planning study and with new developments and operations at Confederation Park and Fifty Point. This area has the potential of becoming a major recreational resource within the Hamilton-Wentworth Region and environmental problems identified will have to be overcome in the future if full use of this resource is going to be realized.

The paper will be accompanied by 35 mm slides to provide a visual aid to conference participants.

JOHN COATES

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BIO-SKETCH

John received his Post-Secondary education at Ryerson Polytechnic Institute, Toronto - graduating in Civil Technology in 1964.

He was employed by the Spencer Creek and Halton Region Conservation Authority from 1964 to 1966 as Conservation Planner and during that period was primarily involved in the acquisition, planning and development of the Valens Reservoir and Conservation area.

When the Spencer Creek Conservation Authority was expanded to become the Hamilton Region Conservation Authority in 1966, John moved to Hamilton as a Conservation Planner with the Hamilton Authority.

Since that time, he has been involved in all aspects of the Authority program as Senior Planner, Superintendent of Planning and Engineering and since 1977 as Assistant General Manager.

As part of his duties with the Authority over the past 17 years, John has been deeply involved both in the field and in a supervisory capacity with various Authority water quality studies within the Hamilton-Wentworth Region.

SOURCES OF POLLUTION, THEIR IMPACT AND BIOLOGICAL
PROCESSES IN HAMILTON'S RECEIVING WATERS

DR. G. P. Harris and Dr. W. J. Snodgrass, McMaster University

This paper will discuss the sources of pollution entering Hamilton's receiving waters. The effects of these effluents on water quality will be described. A series of interactions between the natural properties of the water bodies (Dundas Marsh and Hamilton Harbour) and the effluents control the resulting water quality. While Hamilton's receiving waters are subject to high effluent loadings, the effects of these loadings are in some cases ameliorated by physical processes in the water column. Biological expression of the effluent loadings is not that which might be expected from normal water quality management models.

DR. G. P. HARRIS

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BIO-SKETCH

Dr. Harris was born and raised in Devon, England, and always had an intense interest in field work and bird watching.

He was educated at Plymouth College and Imperial College, London, England, where he took his Ph.D. in Botany and Plant Ecology.

In 1969, Dr. Harris came to Canada and has been employed at McMaster University since that time. He is now working on water pollution and fresh water biology. His main research effort is an attempt to understand the workings of aquatic ecosystems.

Dr. Harris now has an international reputation for his work on the effects of sewage on fresh water systems.

DR. W. J. SNODGRASS - BIO-SKETCH

Dr. Snodgrass was an under-graduate in Civil Engineering at Waterloo University, and has graduate degrees from the Department of Environmental Engineering. He also attended the School of Public Health at the University of North Carolina, Chapel Hill.

He is at present Assistant Professor in Chemical and Civil Engineering at McMaster University.

Dr. Snodgrass's research work has centred primarily on mathematically modelling and predicting bio-chemical regimes in rivers and lakes, particularly Hamilton Harbour, the Grand River Reservoirs and Muskoka Lakes, and Lake Erie. Materials examined include oxygen, nitrogen, phosphorous and various trace metals.

THE LAKE ONTARIO PHOSPHORUS STORY: HOW THE
LAKE IS DOING UP TO NOW

Hugh Dobson - Aquatic Ecology Division,
Canada Centre for Inland Waters

Phosphorus and clarity measurements for Lake Ontario by the Canada Centre for Inland Waters in the last decade indicate greatest production of algae around the year 1973, followed by a 30% reduction by 1980. This trend may be confidently attributed to Canadian and U.S. remedial measures for controlling nutrient phosphorus in the same period, firstly the reduction of the phosphorus content of household detergents, and secondly, chemical precipitation of phosphorus in modernized sewage treatment facilities of cities. Lake Ontario's and Lake Erie's human population, the detergent industry, engineers and government have all helped in this achievement. A further 30% reduction via the Lake Erie loading fraction would place Lake Ontario's conditions near the wisest goal. Oxygen in Lake Ontario's main basin has remained abundant throughout the recent period of increased fertilization.

HUGH DOBSON

-

BIO-SKETCH

Education: High School graduate
University - informal level - no degrees

Employment: Canadian Federal Government
Canada Centre for Inland Waters since 1946
Had previous experience with
Oregon State University
Fisheries Research Building, Canada
Calgary Power Ltd.
Dominion Construction Ltd., Vancouver

Mr. Dobson is experienced in Oceanography and lake science and has been a student of Great Lakes water quality since 1966.

He was the winner of the Chandler-Misener Award of the International Association for Great Lakes Research when the award was first given in 1971.

THE POLLUTION OF BURLINGTON BAY

A. V. Forde - Director of Regional Laboratories
Hamilton-Wentworth Region

This paper will deal with 46 years of analytical data of the waters of Burlington Bay.

It will show how the following parameters have changed with time; bacteria, ammonia, nitrates, chlorides, phosphates.

Reasons will be given for the changes which have occurred and some predictions will be made about the future water quality of the Harbour.

A. V. FORDE

-

BIO-SKETCH

- 1942-45 Served overseas with Royal Canadian Engineers
- 1950 Graduated from McMaster University in Chemistry
- 1950-51 Began career as an explosive chemist with C.I.L.
- 1951-56 A research and development chemist with Canadian
Pittsburgh Industries
- 1956-62 An analytical chemist with Municipal Laboratories,
Corporation of the City of Hamilton
- 1962 Appointed Deputy Director of Municipal Laboratories
- 1972 Appointed Director of Municipal Laboratories
- 1974 Currently director of The Regional Laboratories,
Hamilton-Wentworth Region

ACTIVITIES

1. Was a Chairman of the Hamilton Section of the Chemical
Institute of Canada
2. Was a Councillor on the Council of the Professional
Chemists of Ontario
3. Chairman of the Chemical Advisory Committee of the
Hamilton Board of Education
4. Chairman of Chemical Technology Committee at
Mohawk College
5. Chairman of Environmental Committee at Mohawk College
6. Author of numerous papers and books

THE WATER QUALITY OF COOTES PARADISE

A. W. McLarty, West Central Region
Ontario Ministry of the Environment

Cootes Paradise is a 1200 acre marsh - pond - woodland system receiving a sewage treatment discharge plus drainage from a variety of tributary watersheds ranging from urban to agricultural. A 1975-76 study by the Ministry of the Environment quantified the water quality impact of the Dundas Sewage Treatment plant in relationship to those of the tributary streams. The STP and adjacent Desjardins Canal were determined to cause high concentrations of nitrogen and phosphorus, high bacteria counts, extreme algae production, anaerobic conditions and a pollution-tolerant invertebrate fauna. All recommendations of that study were implemented concurrent with the expansion of the STP from 2 to 4 MGD completed in 1978. A 1979-80 follow-up study by the MOE has detected improvements in water quality in the Desjardins Canal and West Pond portion of the Paradise including major reductions in phosphorus, nitrogen and suspended solids; improvements in the dissolved oxygen conditions, and the algae production in West Pond, though still excessive, has been reduced. This paper reviews the trends in the water quality of Cootes Paradise and comments on potential improvements in the future.

ARCHIBALD WALTER McLARTY - BIO-SKETCH

Born: July 28, 1950 - London, Ontario

Education: University of Western Ontario - Honours
Bachelor of Science in Biology - 1972

University of Guelph - Two semesters
unclassified in Aquatic Biology - 1972-73

Employment: James F. MacLaren Ltd., Consulting
Engineers, London

Summers of 1971, 1972 and 1973

Ontario Ministry of the Environment -
Toronto, Cambridge & Stoney Creek - 1973
to present

Experience:

While employed as Regional Biologist in the West Central Region of the Ministry of the Environment, has been responsible for a wide variety of water quality assessment programs. Water and sediment chemistry, bacteriology, algal productivity and invertebrate community analysis have been utilized to document the water quality conditions of lakes and streams within this region. Specific projects have included studies of Cootes Paradise, Hamilton Harbour, Valens Reservoir, Twelve Mile Creek, portions of the Grand River, and Long Point Bay in the vicinity of the Nanticoke Industrial development. Has provided technical input to environmental assessments, Certificate of Approval, environmental hearings, and court cases.

CHANGES IN THE AQUATIC BIOTA OF COOTES PARADISE MARSH

W. L. Simser, RBG Environmental Biologist

Beginning in 1977 a series of biological surveys were initiated to determine the composition of the aquatic communities of Cootes Paradise. The results of these surveys are presented and compared to those of the late 1940's and early 1950's conducted under the auspices of McMaster University. Considerable change has occurred since then and causal factors for this change discussed.

W. L. SIMSER

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BIO-SKETCH

Was born and raised in Hamilton.

After graduating from Glendale Secondary School, in 1966, spent six years in industry before returning to complete formal education at University of Guelph. Graduated in 1976 with BSc degree in Fisheries - Wildlife Biology and joined the Staff of the Royal Botanical Gardens in June of 1977.

AN OVERVIEW OF ENVIRONMENTAL PROBLEMS IN THE
REDHILL CREEK AND WINDERMERE BASIN SYSTEM

Douglas Craig, Water Resources Assessment Officer, Ontario
Ministry of the Environment, West Central Region

An overview of past and present work carried out by the
Water Resources Section, West Central Region of the
Ministry of the Environment in the Hamilton Area is
given.

The effects of large scale urban development on water
quality are examined in the Redhill Creek and Windermere
Basin system. The urbanization of the Redhill Creek
drainage basin has led to several environmental problems.
Specific causes, effects, and possible solutions are
examined. In a complex urban environment there are no
easy solutions to correcting water quality problems.

DOUGLAS CRAIG

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BIO-SKETCH

Born: June 29, 1950

Education: Honours B.Sc Geology, McMaster University, 1973

M.Sc Geology, McMaster University, 1977

Employment: 1975 - 1977 - Contract Biologist,
West Central Region, Ministry of the
Environment

1977 - present - Water Resources Assessment
Officer, Ontario Ministry of the Environment,
West Central Region

Responsibilities include:

Water quality management in the Hamilton
area and solid waste disposal.

SOCIOLOGICAL CHALLENGES IN SITING
WASTE MANAGEMENT FACILITIES

Desmond M. Connor, Consulting Sociologist and President,
Connor Development Services Limited

The siting of waste management facilities, not only in this area but across Ontario and Canada, has proven to be difficult if not impossible, primarily because of the opposition of various public groups.

To prevent and resolve the issues which arise, the following challenges must be met:

1. Obtain a systematic understanding of the various publics and communities affected and involved.
2. Identify and share the goals of the various parties and work to increase commitment to achieve them.
3. Inform and involve the beneficiaries who usually form the silent majority.
4. Design and manage a systematic process of public information and participation in the planning and decision-making process.

These challenges will be illustrated with references to recent issues at Glanbrook, Middleport and in Halton Region.

DESMOND M. CONNOR

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BIO-SKETCH

Des Connor is a consulting sociologist (Ph.D., Cornell University) and president of Connor Development Services Ltd. which specializes in the design, management and evaluation of citizen participation programs and social impact assessment studies. He conducts workshops in these fields and edits and publishes a quarterly newsletter, Constructive Citizen Participation, which has several hundred subscribers across Canada and the U.S. His handbook, Citizens Participate, has sold over 4,000 copies. Canadian Business (November 1979, P.36) profiled his work: "Consultant Connor: minimizing the cost of participatory democracy".

INDUSTRIAL WASTE AND ITS DISPOSAL IN
THE HAMILTON AREA

Submitted by: ONTARIO PUBLIC INTEREST RESEARCH GROUP
Local Environment Education Project

A presentation will be given of the local Hamilton scene with respect to solid and liquid industrial waste produced and its disposal. The report will present the types of hazardous industrial waste generated and examine transportation practices, present day treatment and disposal practices, existing legislation and alternative waste management systems.

Particular emphasis will be placed on the situation at the Upper Ottawa Street Dump with regard to the concerns of residents and industry, and government action. The history and current status of the Glanbrook Landfill Site as a waste disposal facility will also be reviewed.

ONTARIO PUBLIC INTEREST RESEARCH GROUP
LOCAL ENVIRONMENT EDUCATION PROJECT

A summer research project undertaken by a group of three summer students, federally funded under the Summer Youth Employment Programme, to study industrial waste and its disposal in the Hamilton area.

The Programme Co-ordinator was Karen Tostowaryk.

THE MANAGEMENT OF WASTE MATERIALS AT DOFASCO

W. R. Rombough - Dofasco

Steelmaking and enviromental control systems result in large quantities of liquid wastes and sludges.

The paper will describe Dofasco's recycling techniques and treating systems to:

1. Re-use the material directly or indirectly in the plant processes,
2. Convert the wastes to saleable material,
3. Treat the wastes to form inert solids suitable for land reclamation.

Future efforts will continue to emphasize the upgrading of wastes into useful or saleable materials.

WARREN ROMBOUGH

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BIO-SKETCH

Born in U.S.A. May 3, 1921

Graduated Rose Polytechnic Institute, Terre Haute, Ind. 1943

U.S.A. Corps of Engineers, Captain

Employment:

Koppers Co. 1945 to 1951

DOFASCO - General Foreman Coke Plant, October 1951

Superintendent Blast Furnaces Coke Ovens and Iron 1965

Given environmental control responsibilities in 1969 - is now manager of Coke and Iron Division and Environmental Control.

Married with two children and resides in Stoney Creek.

Affiliated with: APCA, AISI, AIME

WAYS TO RECYCLE AND REUSE WASTES AT STELCO

H. H. Eisler - Environmental Control Manager - Stelco

The steel industry has a long history of reuse and recycle of its solid by-products. The most notable example, of course, is scrap steel which is returned to the mill and recycled over and over again.

This paper will describe other wastes and by-products generated in the process and how they are recycled for reuse, developed into a saleable by-product or otherwise disposed of.

This paper will discuss the past successes in the reuse of by-products as well as identifying potential uses for the future.

H. H. (HUGH) EISLER - BIO-SKETCH

Born: Mitchell, Ontario

Education: BA Sc in Civil Engineering - University of Toronto

Job History: Held various Civil Engineering positions at Stelco.

In 1970, appointed to supervise and co-ordinate engineering

In February 1974, appointed corporate Environmental Control Manager - present position.

Marital status:

Married with two sons.

HISTORY AND FUTURE OF SEWAGE TREATMENT
IN HAMILTON-WENTWORTH REGION

D. Harris, Environmental Operations Engineer

K. Brenner, Environmental Planning Engineer

Regional Municipality of Hamilton-Wentworth

The Hamilton-Wentworth Region owns and operates all public sewage treatment plants and collection systems.

The oldest parts of the system go back to the middle of the 19th Century. The system now consists of some 1000 km of sanitary and combined sewers, three sewage treatment plants, and 1 sewage lagoon. The Region treats approximately 250 million litres per day of sewage. Two of the plants have tertiary treatment while one plant has secondary treatment.

Prior to the existing sewage treatment plants the City of Hamilton had 2 plants, and the Town of Dundas one plant. These facilities were constructed at the beginning of this century.

The dry weather interception of all combined sewers has been essentially completed and the future work will consist of reducing combined sewer overflows, while maintaining separate storm and sanitary sewers in new construction.

D. I. HARRIS, P. ENG. - BIO-SKETCH

Environmental Operations Engineer

Born in South Africa 1943

Graduated in 1965 from the University of Cape Town, South Africa, with a degree of B.Sc in Chemical Engineering.

Registered member of the Association of Professional Engineers of the Province of Ontario.

Associated Member, Institute of Water Pollution Control, London, England.

Immigrated to Canada in 1972.

Over 11 years experience in operation and maintenance of major water and wastewater facilities.

K. A. BRENNER, P. ENG. - BIO-SKETCH

Environmental Planning Engineer

Born in 1934, Tartu, Estonia

Graduated from Queen's University in 1963 with a Bachelor of Science in Civil Engineering

Member of the Association of Professional Engineers of Ontario

Member of the Canadian Society for Civil Engineering

Member of the Engineering Institute of Canada

Worked for R.C.A. Victor Co., Bell Canada, City of Hamilton and Regional Municipality of Hamilton-Wentworth covering electronics, communications and many aspects of municipal engineering.

COMPUTER MODELLING OF HAMILTON'S URBAN DRAINAGE SYSTEM

William James, Professor, Department of Civil Engineering,
McMaster University, Hamilton

A joint study on the 120 square kilometre urban drainage system in the City of Hamilton by McMaster University and the Hamilton-Wentworth Regional Engineering Department was recently implemented. The Ontario Ministry of the Environment is also participating in part of the study. The quantity and quality of stormwater runoff, combined sewer overflows and dry weather flow into Coote's Paradise and Hamilton Harbour have been modelled. Various strategies for minimizing pollutant loadings into these receiving waters are being formulated and compared.

The drainage system comprises 3 major drainage basins, with 15 combined sewer outfalls (greater than 1.22 m diameter) and 290 known active diversion structures. The drainage basins are aligned along prevailing storm tracks. Pollutant loads to the receiving waters appear to be sensitive to the causative storm motion and dynamics and consequently an accurate description of a storm rainfall is required. Ten rainfall-intensity monitoring stations recording at a resolution of one minute in conjunction with 7 streamflow monitoring and water quality sampling stations provide a large base of synchronized data: rainfall intensity, rainfall direction, rainfall quality, flowrates, suspended solids, BOD5, total phosphorous and total nitrogen. Water quality analysis is being carried out by the MDE.

The paper includes a brief description of the drainage system, the field equipment and the Stormwater Management Model (SWMM) for the study area. The paper also describes how the data acquisition system, the programs and micro-, mini-, and main-frame computers can be used to develop a real-time control system for minimizing pollutant loadings to the receiving waters from the combined sewer and drainage system. Ultimately real-time control could be effected by a single microprocessor executing simple (e.g. multiple linear regression type) programs based on the results of the detailed simulation study.

WILLIAM JAMES

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BIO-SKETCH

Education: University of Natal, Durban - Engineering

Delft Technological University, Holland -

Masters Degree in Civil Engineering

Abderdeen University, Scotland - Ph.D.

Dr. James is presently a full professor in Civil Engineering at McMaster University, Hamilton.

THE OBLIGATION OF THE MEDICAL PROFESSION IN THE
CONTROL OF ENVIRONMENTAL POLLUTION

Dr. Harry Paikin

Pollution is a disease of society, the result of social waste that adversely affects the environment. In an industrial society such as ours, wastes produced by manufacturing companies pollute the area and the water in our environs. These wastes constitute a great health hazard, and it is incumbent upon society to safeguard itself against the deleterious effects of such waste.

The prime function of the doctor is to safeguard the health of the people. Public health medicine operated by government valiantly attempts to protect the health of the people. However, it cannot do a job alone because it has neither the manpower nor the economic and political power. It requires the assistance of the whole medical profession in the implementation of public health measures particularly with respect to the control of pollution of the environment.

While doctors hitherto have not regarded the control and treatment of such sociological diseases as pollution, unquestionably in our era, the medical profession must appreciate the detrimental effects of polluting wastes upon patients and the influence of exposure to such wastes on the rate of recovery from disease in general on the part of the patients. All in all, the times require that doctors adopt a much greater role in the control of the environment and the prevention of disease than they have in the past. This means that the medical profession will have to undertake articulate objection to the problem of pollution, a matter which they have heretofore regarded with detachment.

DR. HARRY PAIKIN

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BIO-SKETCH

Graduate of Public and Secondary School system in Hamilton.

Obtained Medical Degree at University of Toronto in 1930.

Has been in the general practice of medicine as a family doctor for almost fifty years.

A Member of the Board of Education for the City of Hamilton for the past thirty-six years, consecutively since 1944.

Chairman of the Board of Education three times.

A Member of the Board of Health of Hamilton for twenty years.

Chairman of the Board of Health four times.

A Past-Chairman, Ontario Urban and Rural School Trustees Association.

Currently a Member of the Board of Directors of Ontario Public School Trustees Association.

Member of the Hamilton Academy of Medicine, Ontario Medical Association, Canadian Medical Association, American Academy of Dermatology, American Public Health Association and American Geriatric Society.

Married, two daughters, and three grandchildren.

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